

**REMARKS**

Claims 1-22 and 24 are pending in this application. Non-elected claims 11-19 have been withdrawn from consideration by the Examiner. By this Amendment, claim 1 is amended and claim 23 is canceled. Support for the amendments to the claim 1 may be found, for example, in canceled claim 23. No new matter is added.

In view of the foregoing amendments and following remarks, Applicants respectfully request reconsideration and allowance.

**I. Office Action Summary**

Applicants note that item 4a) of the Office Action Summary indicates that claims 10-19 are withdrawn from consideration, whereas item 6 indicates that claim 10 is among the rejected claims. Applicants respectfully submit that item 4a) should indicate that claims 11-19 are withdrawn from consideration.

**II. Rejections Under 35 U.S.C. §103**

**A. Janjic**

The Office Action rejects claims 1, 3, 7, 20, and 21 over 35 U.S.C. §103(a) over U.S. Patent No. 3,934,348 to Janjic et al. ("Janjic"). Applicants respectfully traverse the rejection.

**1. Claim 1**

Without conceding the propriety of the rejection, claim 1 is amended to incorporate the subject matter of non-rejected claim 23. Claims 3, 20, and 21 depend from claim 1 and, thus, also require the non-rejected subject matter of claim 23. As such, the rejection is moot with respect to these claims.

**2. Claim 7**

Claim 7 recites: "A kit for forming, on a surface of a substrate of a dental prosthesis, an armored portion constituted by at least two coating layers...wherein viscosity of the second porcelain at a casting temperature is lower than that of the first porcelain."

The Office Action acknowledges that Janjic does not explicitly teach or suggest the above feature. *See* Office Action at page 7. However, it asserts that because Janjic discloses a casting temperature for the first layer (opaque porcelain) that is higher than that of the second layer (regular porcelain) that the viscosity of the regular porcelain would be necessarily higher than that of the opaque porcelain. *See id.* at pages 7-8. The Office Action then asserts that one or ordinary skill in the art would realize that the regular porcelain layer addition should not disturb the opaque porcelain. *See id.* at pages 7-8.

Janjic in fact teaches that the baking temperature of the opaque porcelain starts at 800°F and that the baking temperature of the regular porcelain starts at 800°F after completing the baking of the opaque porcelain. *See* Janjic at column 1, lines 48-62. One of ordinary skill in the art would have understood from these teachings that upon application of the opaque porcelain and the regular porcelain to the mold, the glass components thereof are not melted. Thus, Janjic does not provide a teaching or a suggestion regarding the viscosity of the porcelain layers.

Although Janjic does teach that the maximum baking temperature of the regular porcelain is lower than that of the opaque porcelain, this is not informative of the viscosity of the materials, but rather of avoiding melting the opaque porcelain so it will not mix with the regular porcelain. One or ordinary skill in the art would have identified that the temperature differences were taught to avoid mixing, not to suggest a necessary viscosity.

For at least these reasons, claim 7 would not have been rendered obvious by Janjic.

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Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection.

**B. Janjic in view of Fukuda**

The Office Action rejects claims 2, 23, and 24 over 35 U.S.C. §103(a) over Janjic in view of JP-06-269466 to Fukuda et al. ("Fukuda"). By this Amendment, claim 23 is canceled, rendered its rejection moot. However, because the subject matter of claim 23 is incorporated into claim 1, Applicants respectfully traverse the rejection.

By this Amendment, claim 1 is amended to require, "a step of forming a cast coating layer on at least a part of a surface of the back coating layer, by pouring a softened second porcelain into the void of the casting mold via the porcelain introducing passage under pressure at a casting temperature to form at least two coating layers on the surface of the substrate." The combination of Janjic and Fukuda would not have rendered obvious at least this feature of amended claim 1.

The Office Action asserts that casting is a process where a substance in liquid or plastic form is poured into a mold without pressure. *See* Office Action at page 5. As indicated above, claim 1 is amended to require that the pouring is done under pressure. Janjic fails to disclose such a process.

Fukuda does not cure this deficiency of Janjic. Fukuda discloses forming a cast coating layer by centrifugal casting, wherein the glass composition material is heated to a temperature of 1450°C to have a very small viscosity and is poured into the mold using centrifugal force. *See* Fukuda at paragraph [0036]. As such, Fukuda describes a process of forming a cast coating layer that is quite different from that required by amended claim 1.

Claim 1 would not have been rendered obvious by the combination of Janjic and Fukuda. Claims 2 and 24 depend from claim 1 and, thus, also would not have been rendered obvious by Janjic and Fukuda. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection.

**C. Janjic in view of Sekino**

The Office Action rejects claims 4, 6, 8, and 10 over 35 U.S.C. §103(a) over Janjic in view of U.S. Patent No. 6,740,267 to Sekino et al. ("Sekino"). Applicants respectfully traverse the rejection for at least the following reasons.

The deficiencies of Janjic with respect to claims 1 and 7 are discussed above. Sekino, which is only relied upon by the Office Action for its alleged disclosure of the additional limitations recited in claims 4, 6, 8, and 10, at least fails to cure the deficiencies of the combination of Janjic with respect to claim 1. As such, the combination of Janjic and Sekino fails to teach or suggest each and every limitation of claims 1 and 7. Accordingly, the subject matter of claims 1 and 7 cannot be fairly considered to have been rendered obvious by the combined teachings of Janjic and Sekino.

Claims 4, 6, 8, and 10 variously depend from claims 1 and 7 and, thus, require all the limitations of claims 1 and 7, respectively. Thus, for at least the reasons discussed above, claims 4, 6, 8, and 10 would not have been rendered obvious by the combined teachings of Janjic and Sekino.

In addition to the above reasons, claims 4, 6, 8, and 10 would not have been rendered obvious by the applied combination because the applied combination does not teach or suggest all the additional limitations recited in these claims. The Office Action recognizes that Janjic does not teach or suggest that the viscosity of the first porcelain is "at least 1.5 times as high as that of the second porcelain" as claimed in claims 4 and 8. *See* Office Action at page 11. Similarly, the Office Action recognizes that Janjic does not teach or suggest "the viscosity of the first porcelain at the casting temperature ranges from  $2 \times 10^6$  (cP) to  $5 \times 10^7$  (cP), while the viscosity of the second porcelain at the casting temperature ranges from  $1 \times 10^6$  (cP) to  $3 \times 10^7$  (cP)" as claimed in claims 6 and 10. However, the Office Action asserts that Sekino cures these deficiencies. *See id.* Applicants respectfully disagree.

Sekino discloses (a) a method for pouring the ceramics brought into a highly viscous state of about  $10^2$  to  $10^6$  poise into the mold, and (b) a method for pouring the ceramics melting to have a viscosity of about  $10^2$  to  $10^9$  poise into the mold. However, Sekino does not teach or suggest utilizing these two ceramics as the first porcelain and the second porcelain. Method (a) illustrates the conventional art, while method (b) illustrates the viscosity of one ceramic for executing the technique of Sekino. That is, in Sekino, the casting creates a ceramic core E (see Sekino at Fig. 1) made of only one porcelain poured into the mold. Sekino does not teach or suggest anything relating to pouring two porcelains into the mold. As a result, Sekino does not teach or suggest that the viscosity of the first porcelain is "at least 1.5 times as high as that of the second porcelain" as recited in claims 4 and 8 or the two specified viscosities recited in claims 6 and 10.

Claims 4, 6, 8, and 10 would not have been rendered obvious by Janjic and Sekino. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection.

**D. Janjic in view of Brodkin**

The Office Action rejects claims 5 and 9 over 35 U.S.C. §103(a) over Janjic in view of U.S. Patent No. 6,428,614 to Brodkin et al. ("Brodkin").

The deficiencies of Janjic with respect to claims 1 and 7 are discussed above. Brodkin, which is only relied upon by the Office Action for its alleged disclosure of the additional limitations recited in claims 5 and 9, at least fails to cure the deficiencies of the combination of Janjic with respect to claims 1 and 7. As such, the combination of Janjic and Brodkin fails to teach or suggest each and every limitation of claims 1 and 7. Accordingly, the subject matter of claims 1 and 7 cannot be fairly considered to have been rendered obvious by the combined teachings of Janjic and Brodkin.

Claims 5 and 9 depend from claims 1 and 7 and, thus, require all the limitations of claims 1 and 7, respectively. Thus, for at least the reasons discussed above, claims 5 and 9 would not have been rendered obvious by the combined teachings of Janjic and Brodkin.

In addition to the above reasons, claims 5 and 9 would not have been rendered obvious by the applied combination because the applied combination does not teach or suggest all the additional limitations recited in these claims. The Office Action recognizes that Janjic does not teach or suggest the features recited in claims 5 and 9. *See* Office Action at page 13. However, it asserts that Brodkin cures these deficiencies. Applicants respectfully disagree.

Claims 5 and 9 recite percentage contents for the first and second porcelains as set forth *supra*. Brodkin discloses some kinds of porcelain compositions. *See, e.g.*, Brodkin at Table 3. However, Brodkin at least does not disclose the second porcelain recited in claims 5 and 9 having MgO as an essential component because the opaque porcelain shown in Table 3 is different. In addition, the second porcelain is the cast porcelain, not the opaque porcelain and should be instead compared with a body and incisal porcelain shown in Table 3. One of ordinary skill in the art would have recognized that body and incisal porcelain is different from cast porcelain.

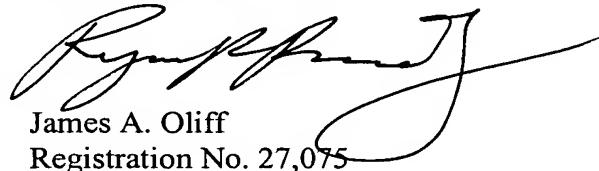
Claims 5 and 9 would not have been rendered obvious by Janjic and Brodkin. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection.

### **III. Conclusion**

In view of the foregoing, Applicants respectfully submit that this application is in condition for allowance. Applicants earnestly solicit favorable reconsideration and prompt allowance of the application.

Should the Examiner believe that anything further would be desirable to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Date: June 17, 2009

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